



Buenos  
Aires  
Provincia



# OATS IN ARGENTINA

*Wehrhahne, Nilda Liliana*

*Wehrhahne.liliana@inta.gob.ar*

*Chacra Experimental Integrada Barrow*

*Convenio Ministerio Agroindustria Bs. As.-INTA*

# LOCATION

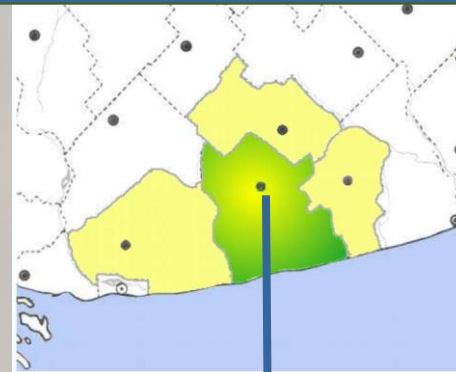


**Chacra Experimental Integrada Barrow**

Temuco

Buenos Aires

Porto Alegre



**Tres Arroyos**



# INTRODUCTION

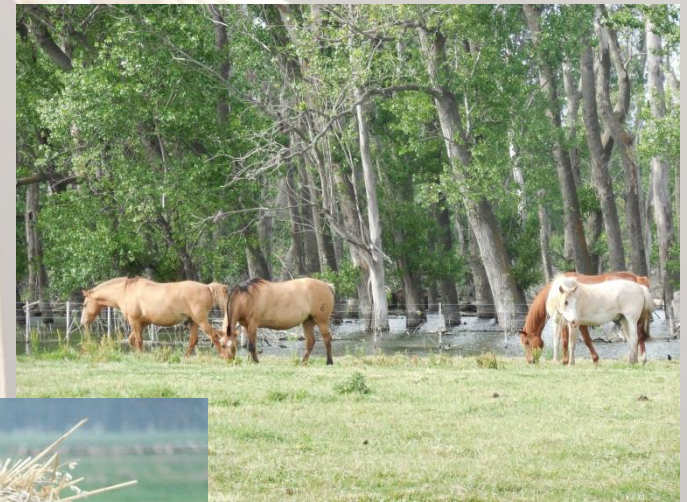
- Oats (*Avena spp.*) is a crop with multiple uses





# INTRODUCTION

- Predominantly employed for feed or hay.



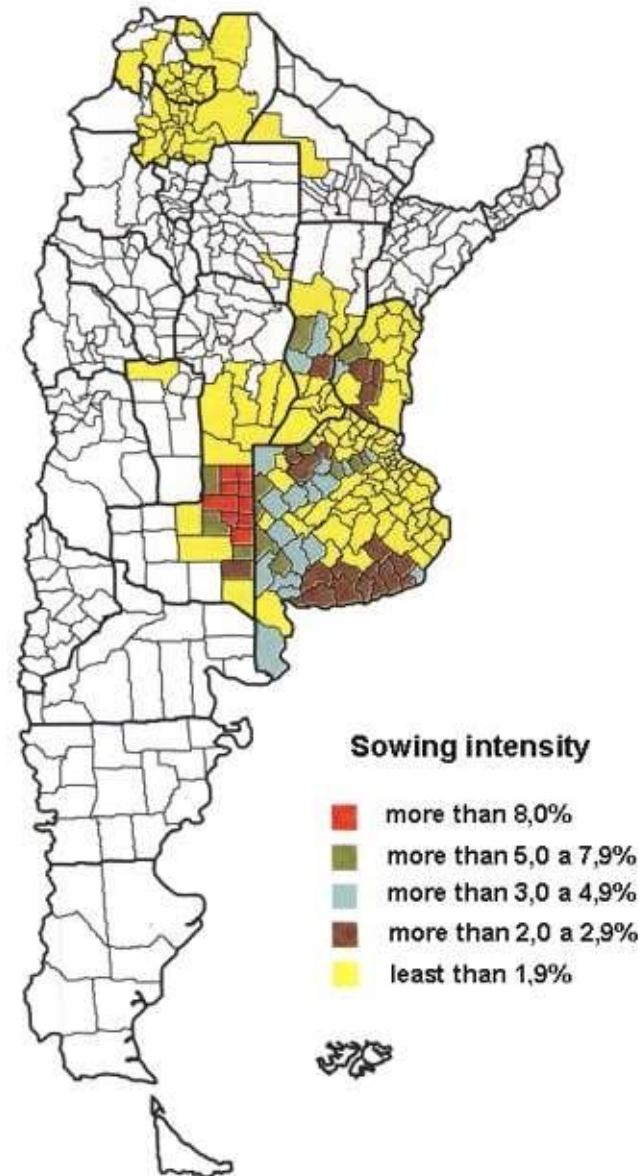


# INTRODUCTION

- Whole plant silage



- Oat is cultivated in different regions.
- 250,000 ha are harvested.
- The grain production is around 530,000 tons.





# ARGENTINA CLIMATE CHARACTERISTICS

- **North of the country:**

Climate is warm and humid with temperatures ranging from 27°C in January to 12°C in July, rainfall goes from 2000 mm per year in the east to 600 mm per year in the west

- **The Pampa region:**

Mild climate with an average temperature of 15°C and precipitation ranging from 1000 mm per year in the east to 500 mm per year in the west



**Córdoba**



**Patagonia**





**Irrigation**



**Buenos Aires**



- In Tres Arroyos city there are small industries that use oat

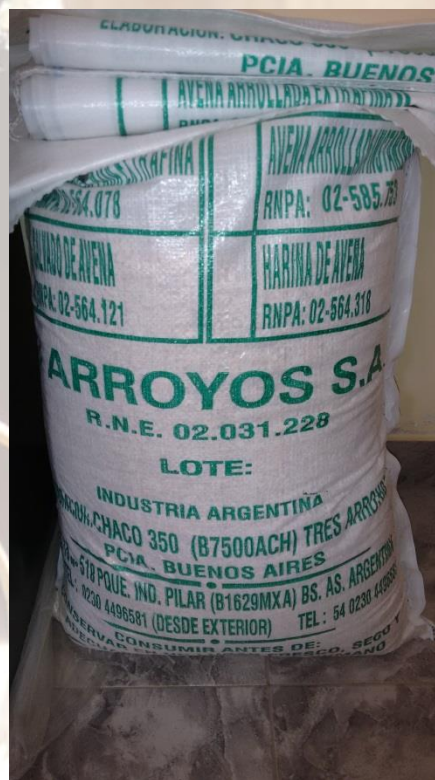


**Industrial Park**





- The industry produces oat flakes and other food productions for the local market and also for export.

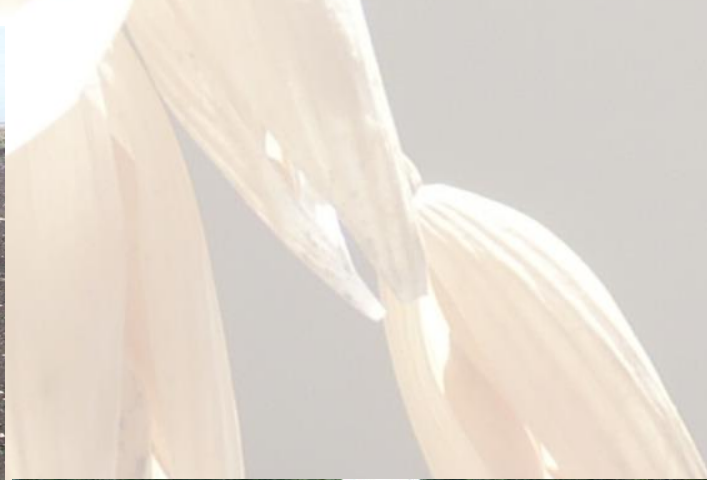


# BARROW CHARACTERISTICS

- **Soil type:** Petrocalcic Paleudoll, clay loam
- **Historical average rainfall:** 756 mm
- **Precipitation:** 2014 1258 mm; 2015 699 mm
- **Temperatures:**  
In 2015 the average temperature of June to September were higher than the media  
October and November were lower than the historical average



# BARROW CHARACTERISTICS



2014 and 2015

# CROP MANAGEMENT

- **Sowing date**
- **Population density**
- **Fertilization**
- **Weed control**
- **Disease control**
- **Aphid control**



# OLD PROBLEMS



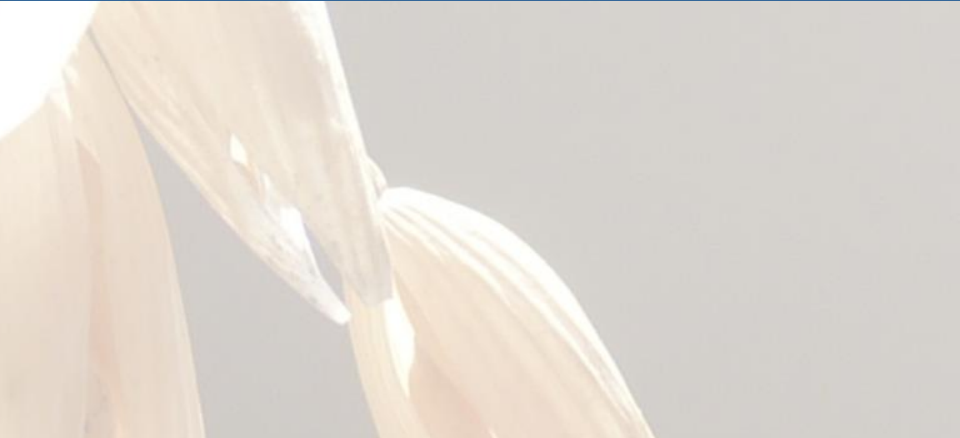
*Avena fatua* and *Lolium* sp.



*Avena fatua* seeds



# NEW PROBLEMS



Sulfonilureas  
Imidazolinonas



# SOWING DATE

Date of	Month											
	Jan	Febr	March	April	May	June	July	Aug	Set	Oct	Nov	Dec
Planting		Light Green			Light Orange							
Grazing					Green							
Harvest	Orange										Orange	



# DISEASES

*Puccinia coronata*



*Puccinia graminis*





# DISEASES



*Pyrenophora chaetomioides*



*Pseudomonas coronafaciens*

# IMPROVEMENT

**Breeding oat in Argentina is done by INTA in the centres of Chacra Experimental Integrada Barrow and Bordenave Station**

## **Objectives:**

- **High forage and grain yield**
- **Improve the behaviour to crown and stem rust, aphid, lodging, frost damage**
- **Grain quality**



# AGRONOMIC TRAITS

Frost damage



Aphid damage





# BREEDING PROGRAMME

- **Crosses**
- **Oat Quaker Nursery – Oat Global**
- **Brazil materials**
- **Sanitary nurseries in Paraná (Entre Ríos) and Reconquista (Santa Fe)**
- **Test of materials in different environments (Barrow, Bordenave, Marcos Juárez, Manfredi, Mercedes, Paraná)**





# NEW VARIETY

**Bonaerense INTA Sureña**

**Bonaerense INTA Aikén**

**Bonaerense INTA Yapa**

**Forage, Silage and grain**

**Quality Grain**



# EXPERIMENTAL FIELD

Seed increasing



Trials







Direct sowing





# RESULTS 2015



**CHACRA EXPERIMENTAL INTEGRADA BARROW**  
(Convenio Ministerio Agroindustria Bs. As. - INTA)



Ministerio de Agroindustria  
Presidencia de la Nación

# TRIALS INFORMATION

- **Date of sowing/emergence: July 2 – July 20**
- **Harvest date: December 14**
- **Population density: 250 plants/m<sup>2</sup>**
- **Plot size: 7 m<sup>2</sup>**
- **Rainfall: 699 mm**
- **Frost: 45 days**



# QUALITY PARAMETERS

Cultivar	Test Weight (kg/hl)	TKW (g)	Groat (%)
Bonaerense INTA Sureña	56,45	31,3	70,0
Bonaerense INTA Yapa	56,05	30,9	71,4
Lucía INTA	54,55	32,9	72,6
Carlota INTA	54,15	33,2	69,8
Violeta INTA	53,95	32,1	70,6
Cristal INTA	53,75	33,6	73,0
Julieta INTA	52,50	33,3	68,8
Bonaerense INTA Calén	52,50	30,8	68,8
Elisabeth INTA	52,25	34,8	70,4
Bonaerense INTA Aiken	52,05	34,9	71,8
Marita INTA	51,85	32,0	75,6
Bonaerense INTA Maná	50,60	30,7	66,0

# QUALITY

- **Protein**
- **Oil**
- **Beta glucans**
- **Preliminary test Celiac**



# DISEASES - RUST



# RUST

Cultivar	Crown rust		Stem rust	
	2014	2015	2014	2015
Bonaerense INTA Sureña	2	3	1	6
Bonaerense INTA Yapa	1	2	1	3
Carlota INTA	6	6	3	6
Violeta INTA	7	5	3	3
Cristal INTA	5	5	2	3
Julieta INTA	5	5	3	3
Bonaerense INTA Calén	6	3	1	8
Elisabeth INTA	1	3	6	1
Bonaerense INTA Aiken	2	5	3	5
Marita INTA	6	5	4	1
Bonaerense INTA Maná	3	2	1	3
Bv 24-05	9	-	3	-
Bw 130	0	3	3	5

Scale: 0-9



# CONCLUSION

- **Barrow region is a supplier of seed and quality grain**
- **Some cultivars are used for different purposes**
- **There are new cultivars**
- **The industry makes grain production contracts**
- **Diseases are the main problem**
- **Preliminary interesting test results with oat for celiac people**

# OAT WORKERS



Ing. Agr. Héctor Carbajo



Ing. Agr. Enrique Antonelli





**THANK YOU VERY MUCH!!**